THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A method of making a high reflectivity micro mirror, comprising the steps of:

providing a monolithic bulk crystal silicon having an anisotropic body with a crystalline plane; and

applying chemical agents to selectively remove a portion of the body overlying the crystalline plane to expose a portion of the crystalline plane, such that a mirror surface is formed which is co-extensive with the exposed portion of the crystalline plane.

2. The method as defined in Claim 1, the portion of the body being removed being a passage extending parallel to the crystalline plane.

3. The method as defined in Claim 1, the portion of the body being removed being an inlet passage and an outlet passage which intersect at the crystalline plane.

4. The method as defined in Claim 1, upon exposure, the mirror surface which is co-extensive with the exposed portion of the crystalline plane becomes part of an exterior surface of the body.

5. The method as defined in Claim 1, upon exposure, the mirror surface which is co-extensive with the exposed portion of the crystalline plane remains positioned internally within the body.

6. The method as defined in Claim 1, several portions of the body overlying the crystalline plane being selectively removed to expose several discrete portions of the crystalline plane, such that several mirror surfaces are formed each of which is co-extensive with one of the several discrete exposed portions of the crystalline plane.

7. The method as defined in Claim 6, the several discrete portions being parallel passages extending along the crystalline plane.

8. The method as defined in Claim 6, the several discrete portions being intersecting passages extending along the crystalline plane.

9. The method as defined in Claim 6, the several discrete portions being axially aligned and spaced apart along the crystalline plane.

10. The method as defined in Claim 1, the anisotropic body of the monolithic bulk crystal silicon having several crystalline planes, chemical agents being applied to selectively remove a portion of the body overlying selected ones of the several crystalline planes to expose portions of the selected ones of the several crystalline planes, such that mirror surfaces are formed which are co-extensive with the exposed portions of the selected ones of the several crystalline planes.

11. The method as defined in Claim 1, the monolithic bulk crystal silicon being cut into wafers.

12. The method as defined in Claim 11, the wafers being selectively cut from the monolithic bulk crystal silicon at angles to ensure the crystalline plane of the wafers have an orientation consistent with an intended application.

13. The method as defined in Claim 12, the wafers being stacked to provide a composite mirror surface consisting of the mirror surfaces of two or more wafers.

14. The method as defined in Claim 1, means being provided to selectively adjust the reflection angle of the mirror surface by manipulating the position of the body.

15. The method as defined in Claim 1, the mirror surface being a refractive surface adapted to split ~~an~~ input light beam into several output light beams.

16. The method as defined in Claim 1, the mirror surface being a diffractive surface adapted to split an input light beam into several output light beams.

17. The method as defined in Claim 1, the mirror surface being an holographic surface adapted to split an input light beam into several output light beams.

18. A method of making a high reflectivity micro mirror, comprising the steps of:

providing a monolithic bulk crystal silicon wafer having an anisotropic body with a crystalline plane, the wafer being cut so that the crystalline plane is in a selected angular orientation; and

applying chemical agents to selectively remove a portion of the body overlying the crystalline plane to expose a portion of the crystalline plane, such that a mirror surface is formed which is co-extensive with the exposed portion of the crystalline plane and is part of an exterior surface of the body.

19. The method as defined in Claim 18, including a further step of stacking two or more wafers to provide a composite mirror surface consisting of the mirror surfaces of the two or more wafers.

20. The method as defined in Claim 18, several portions of the body overlying the crystalline plane being selectively removed to expose several discrete portions of the crystalline plane, such that several mirror surfaces are formed each of which is co-extensive with one of the several discrete exposed portions of the crystalline plane.

21. The method as defined in Claim 20, the several discrete portions being parallel passages extending along the crystalline plane.

22. The method as defined in Claim 20, the several discrete portions being intersecting passages extending along the crystalline plane.

23. The method as defined in Claim 20, the several discrete portions being axially aligned and spaced apart along the crystalline plane.

24. A method of making a high reflectivity micro mirror, comprising the steps of:

providing a monolithic bulk crystal silicon wafer having an anisotropic body having several crystalline planes;

applying chemical agents to selectively remove a portion of the body overlying a selected one of the several crystalline planes to expose portions of the selected one of the several crystalline planes, such that a mirror surface is formed which is co-extensive with the exposed portions of the selected one of the several crystalline planes, the portion of the body being removed being an inlet passage and an outlet passage which intersect at the selected one of the several crystalline planes with the selected one of the crystalline planes positioned internally within the body.

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25. A high reflectivity micro mirror, comprising:

a monolithic bulk crystal silicon having an anisotropic body with a crystalline plane; and

a mirror surface co-extensive with a selectively exposed portion of the crystalline plane.

26. The high reflectivity micro mirror as defined in Claim 25, wherein at least one passage extends across the crystalline plane.

27. The high reflectivity micro mirror as defined in Claim 25, wherein the crystalline plane is positioned internally within the body and the body has an inlet passage and an outlet passage which intersect at the selectively exposed portion of the crystalline plane.

28. The high reflectivity micro mirror as defined in Claim 25, wherein the crystalline plane is positioned across an exterior surface of the body.

29. The high reflectivity micro mirror as defined in Claim 25, wherein parallel passages extend across the crystalline plane.

30. The high reflectivity micro mirror as defined in Claim 25, wherein intersecting passages extend across the crystalline plane.

31. The high reflectivity micro mirror as defined in Claim 25, wherein several axially aligned mirror surfaces are spaced across the crystalline plane.

32. The high reflectivity micro mirror as defined in Claim 25, wherein the body is a wafer.

33. The high reflectivity micro mirror as defined in Claim 32, wherein two or more wafers are stacked to provide a composite mirror surface consisting of the mirror surfaces of the two or more wafers.

34. The high reflectivity micro mirror as defined in Claim 25, wherein means is provided to selectively adjust the reflection angle of the mirror surface by manipulating the position of the body.

35. The high reflectivity micro mirror as defined in Claim 25, wherein the mirror surface is a refractive surface adapted to split an input light beam into several output light beams.

36. The high reflectivity micro mirror as defined in Claim 25, wherein the mirror surface is a diffractive surface adapted to split an input light beam into several output light beams.

37. The high reflectivity micro mirror as defined in Claim 25, wherein the mirror surface is an holographic surface adapted to split an input light beam into several output light beams.

38. A high reflectivity micro mirror, comprising:

a monolithic bulk crystal silicon having an anisotropic body with a crystalline plane and an exterior surface, the body having the crystalline plane in a selected angular orientation; and

a mirror surface co-extensive with an exposed portion of the crystalline plane on the exterior surface of the body.

39. The high reflectivity micro mirror as defined in Claim 38, wherein two or more bodies are stacked to provide a composite mirror surface consisting of the mirror surfaces of the two or more bodies.

40. The high reflectivity mirror as defined in Claim 38, wherein parallel passages extend along the crystalline plane.

41. The high reflectivity mirror as defined in Claim 38, wherein intersecting passages extend along the crystalline plane.

42. The high reflectivity mirror as defined in Claim 38, wherein several mirror surfaces are axially spaced along the crystalline plane.

43. The high reflectivity micro mirror as defined in Claim 38, wherein an actuator is provided to selectively rotate the body, thereby adjusting the reflection angle of the mirror surface.

44. The high reflectivity micro mirror as defined in Claim 38, wherein an actuator is provided to selectively move the body one of axially and laterally, thereby shifting the position of a beam reflecting from the mirror surface.

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45. A high reflectivity micro mirror, comprising:

a monolithic bulk crystal silicon having an anisotropic body with several crystalline planes;

a mirror surface co-extensive with an exposed portion of a selected one of the several crystalline planes positioned internally within the body; and

an inlet passage and an outlet passage which intersect at the selected one of the several crystalline planes.

46. A high reflectivity micro mirror, comprising in combination:

a housing having at least one ingress light path and a plurality of egress light paths;

a plurality of monolithic bulk crystal silicon each having an anisotropic body with a crystalline plane and an exterior surface, the crystalline plane being in a selected angular orientation and a mirror surface co-extensive with an exposed portion of the crystalline plane on the exterior surface of the body, each body being positioned within the housing out of alignment with the ingress light path; and

several actuators for moving a selected one of the plurality of bodies into the ingress light path until the mirror surface is oriented at a reflection angle adapted to direct a reflected beam along a selected one of the plurality of egress light paths.

47. A high reflectivity micro mirror, comprising in combination:

a housing having an ingress light path on a first plane and an egress light path on a second plane, the egress light path being angularly offset from the ingress light path;

monolithic bulk crystal silicon having an anisotropic body with a crystalline plane and an exterior surface, the crystalline plane being in a selected angular orientation and a mirror surface co-extensive with an exposed portion of the crystalline plane on the exterior surface of the body;

at least one of the bodies being positioned on the first plane in the ingress light path with the mirror surface oriented at a reflection angle adapted to reflect a light beam to the second plane; and

at least one of the bodies being positioned on the second plane with the mirror surface oriented at a reflection angle adapted to direct the reflected light beam along the egress light paths.

48. The high reflectivity micro mirror as defined in Claim 47, wherein a light penetrable membrane is placed between the first plane and the second plane, thereby altering properties of the light beam passing from the ingress light path to the egress light path.

49. The high reflectivity micro mirror as defined in Claim 48, wherein the light penetrable membrane is a light filter.

50. The high reflectivity micro mirror as defined in Claim 48, wherein the light penetrable membrane is adapted to effect light beam modulation.

51. A high reflectivity micro mirror, comprising:

a monolithic bulk crystal silicon having an anisotropic body with a crystalline plane and an exterior surface, the crystalline plane being in a selected angular orientation;

a mirror surface co-extensive with an exposed portion of the crystalline plane on the exterior surface of the body, the mirror surface having a beam splitting surface treatment.

52. A high reflectivity micro mirror, comprising in combination:

a housing having a plurality of pairs of ingress light paths and corresponding egress light paths, each of the ingress light paths being on a first plane and each of the corresponding egress light paths being on a second plane, each of the corresponding egress light paths being angularly offset from the ingress light paths;

monolithic bulk crystal silicon wafers having an anisotropic body with a crystalline plane and an exterior surface, the crystalline plane being in a selected angular orientation and a mirror surface co-extensive with an exposed portion of the crystalline plane on the exterior surface of the body;

each pair having at least one of the wafers positioned on the first plane in the ingress light path with the mirror surface oriented at a reflection angle adapted to reflect a light beam to the second plane; and

each pair having at least one of the wafers positioned on the second plane with the mirror surface oriented at a reflection angle adapted to direct the reflected light beam along the corresponding egress light path.

53. The high reflectivity micro mirror as defined in Claim 52, wherein a light penetrable membrane is placed between the first plane and the second plane, thereby altering properties of the light beam passing from the ingress light path to the egress light path.

54. The high reflectivity micro mirror as defined in Claim 53, wherein the light penetrable membrane is a light filter.

55. The high reflectivity micro mirror as defined in Claim 53, wherein the light penetrable membrane is adapted to effect light beam modulation.

56. A high reflectivity micro mirror, comprising in combination:

a housing having at least one ingress light path and at least one corresponding egress light path, the at least one ingress light path being on a common plane but out of axial alignment with the at least one corresponding egress light path, the housing having an interior cavity a first supporting surface and a second supporting surface in parallel spaced relation;

a plurality monolithic bulk crystal silicon wafers each having an anisotropic body with a crystalline plane and an exterior surface, the crystalline plane in a selected angular orientation and a mirror surface co-extensive with an exposed portion of the crystalline plane on the exterior surface of the body;

a first of the plurality of wafers being positioned on the first supporting surface in the at least one ingress light path with the mirror surface oriented at a reflection angle adapted to reflect a light beam to the second supporting surface;

a pair of angularly offset wafers of the plurality of wafers being positioned on the second supporting surface with their mirror surfaces oriented at reflection angles adapted to effect a realignment of the light beam and reflect the light beam back to the first supporting surface; and

a second of the plurality of silicon wafers being positioned on the first supporting surface with the mirror surface oriented at a reflection angle adapted to reflect the light beam along the at least one corresponding egress light path.

57. A high reflectivity micro mirror, comprising:

a monolithic bulk crystal silicon having an anisotropic body with a crystalline plane and an exterior surface, the crystalline plane being in a selected angular orientation;

a mirror surface co-extensive with an exposed portion of the crystalline plane on the exterior surface of the body; and

an actuator to selectively move the body, the actuator including arms which move in response to an application of an electrical current.

58. The high reflectivity micro mirror as defined in Claim 57, wherein the arms are resistors which heat up and expand upon application of an electrical current.

59. The high reflectivity micro mirror as defined in Claim 57, wherein three parallel arms are provided, means being provided to cause unequal expansion of the arms, thereby effecting a partial rotation of the body.

60. A high reflectivity micro mirror, comprising in combination:

a housing having a plurality of ingress light paths and a single egress light path;

monolithic bulk crystal silicon having an anisotropic body with a crystalline plane and an exterior surface, the crystalline plane being in a selected angular orientation and a mirror surface co-extensive with an exposed portion of the crystalline plane on the exterior surface of the body;

one of the bodies being positioned on each ingress light path and having the mirror surface oriented at a reflection angle adapted to reflect a light beam to the single egress light path.

61. A high reflectivity micro mirror, comprising:

a monolithic bulk crystal silicon having an anisotropic body with a crystalline plane and an exterior surface, the body having the crystalline plane in a selected angular orientation; and

a mirror surface co-extensive with an exposed portion of the crystalline plane on the exterior surface of the body, the mirror surface having a reflectivity enhancing coating.

62. The high reflectivity micro mirror as defined in Claim 61, wherein the coating being photonic crystals.